

Amendment
Appn. No. 10/735,192

5000-1-501

IN THE CLAIMS

Please amend the claims as follows:

1 - 10. (Canceled)

11. (Original) A method of fabricating an optical module having a micro-lens integrated therein, comprising the steps of:

- (a) sequentially forming a lower cladding layer and a core layer on a substrate;
- (b) forming a planar lightwave circuit (PLC) pattern on the substrate by selectively etching the core layer and the lower cladding layer;
- (c) forming a PLC by forming an upper cladding layer on the overall surface of the substrate;
- (d) forming a thin-film structure in a lens forming area by selectively removing the upper cladding layer in an area other than the area of the PLC and the lens forming area; and
- (e) forming the micro-lens by reflow by thermally treating the thin-film structure.

12. (Original) The method of claim 11, wherein the thin film is formed of SiO_2 containing a dopant.

13. (Original) The method of claim 12, wherein the dopant comprises one of GeO_2 , P_2O_5 , B_2O_3 , TiO_2 , and Al_2O_3 .

14. (Original) The method of claim 12, wherein the dopant includes one or more

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materials selected from the group consisting of GeO_2 , P_2O_5 , B_2O_3 , TiO_2 , and Al_2O_3 .

15. (Original) The method of claim 11, wherein the shape of the micro-lens is controlled according to the shape of the photoresist pattern and the thickness of the upper cladding layer.

16. (Original) The method of claim 11, further comprising: (f) forming a non-reflective coating layer on the surface of the micro-lens.

17. (Original) An optical module manufactured according to the process recited in claim 11.

18. (Original) An optical module manufactured according to the process recited in claim 13.

19. (Canceled)

20. (Currently Amended) An optical module having a micro-lens integrated therein, comprising:

~~a lower cladding layer and a core layer arranged on a substrate ; a planar~~
lightwave circuit (PLC) comprising a lower cladding layer and a core layer arranged on a
substrate to form a PLC area; and ~~pattern arranged on the substrate by selectively etching~~
~~portions of the core layer and the lower cladding layer from the substrate;~~

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an upper cladding layer arranged ~~on the overall surface of the substrate; and~~
~~a thin film structure arranged in a lens forming area of the substrate by removing~~
~~the upper cladding layer in an area other than the area of~~ on the PLC area and the lens
forming area adjacent the PLC area; and

a lens comprising a controlled reflow of the ~~thin film structure~~ upper cladding
arranged on the lens forming area.